

AMENDMENTS TO THE TITLE:

Please amend the title as follows:

SEMICONDUCTOR LASER DEVICE WITH LIGHT RECEIVING ELEMENT

AMENDMENTS TO THE SPECIFICATION:

Please amend the paragraph beginning at page 3, line 24, as follows:

~~Meanwhile, these~~ These conventional semiconductor laser devices desirably attempt to satisfy the following requirements:

Please amend the paragraphs beginning at page 4, line 15, through page 5, line 15, as follows:

~~According to the present invention, there is provided a~~ A semiconductor laser device, which comprises: a package having a front surface, a rear surface and an outer peripheral surface; a semiconductor laser element and a light receiving element provided on the front surface; a plurality of leads arranged in spaced relation on the front surface as extending outward from the package; and an optical element supported above the front surface with its optical axis perpendicular to the front surface for guiding a laser beam emitted from the semiconductor laser element toward an object and guiding light reflected on the object to the light receiving element; wherein the outer peripheral surface is configured so as to be fitted in a cylindrical hole having an axis parallel to the optical axis of the optical element, and has a recess extending from the front surface to the rear surface; and the leads are bent as extending from the front surface and passing through the recess with distal portions thereof extending along the optical axis of the optical element and with proximal ends thereof electrically connected to the semiconductor laser element and the light receiving element.

~~According to the present invention, the~~ The outer peripheral surface of the package is configured so as to be fitted in the cylindrical hole, and the leads are bent downward from the package through the recess of the outer peripheral surface of the package. Therefore, the exterior size of the semiconductor laser device can be reduced, and the semiconductor laser device can easily be mounted in a hole of a housing of a pick-up device.

Please amend the paragraph beginning at page 5, line 17, as follows:

Fig. 1 is a front view of a semiconductor laser device according to a first example embodiment of the present invention, which is mounted in a light pick-up device;

Please amend the paragraph beginning at page 6, line 12, as follows:

Fig. 11(a) is a top view of a semiconductor laser device according to a second example embodiment of the present invention before leads are bent;

Please amend the paragraphs beginning at page 6, line 22, through page 7, line 2, as follows:

Figs. 12(a) and 12(b) are top views of a semiconductor laser device according to a third example embodiment of the present invention before and after leads are bent;

Figs. 13(a) and 13(b) are top views of a semiconductor laser device according to a fourth example embodiment of the present invention before and after leads are bent;

Please amend the paragraphs beginning at page 7, line 5, through line 14, as follows:

Fig. 14 is a sectional view illustrating a fifth example embodiment of the present invention;

Figs. 15(a) and 15(b) are sectional views illustrating a sixth example embodiment of the present invention;

Fig. 16 is a sectional view illustrating a seventh example embodiment of the present invention;

Figs. 17(a) and 17(b) are a top view and a front view for explaining an inventive production process in detail; and

Fig. 18 is a diagram for explaining the inventive production process in detail.

Please amend the paragraphs beginning at page 7, line 16, through page 9, line 18, as follows:

According to one aspect of the present invention, a ~~A~~ semiconductor laser device comprises: a package having a front surface, a rear surface and an outer peripheral surface; a semiconductor laser element and a light receiving element provided on the front surface; a plurality of leads arranged in spaced relation on the front surface as extending outward from the package; and an optical element supported above the front surface with its optical axis perpendicular to the front surface for guiding a laser beam emitted from the semiconductor laser element toward an object and guiding light reflected on the object to the light receiving element; wherein the outer peripheral surface is configured so as to be fitted in a cylindrical hole having an axis parallel to the optical axis of the optical element, and has a recess extending from the front surface to the rear surface, and the leads are bent as extending from the front surface and passing through the recess with distal portions thereof extending along the optical axis of the optical element and with proximal ends thereof electrically connected to the semiconductor laser element and the light receiving element.

In the present invention, the ~~The~~ optical axis of the optical element may be aligned with the axis of the cylindrical hole. A hologram element may be employed as the optical element.

In the present invention, the ~~The~~ package may comprise a planar substrate, and a plurality of projections arranged in spaced relation as projecting outward from the substrate parallel to the substrate, and the recess may be defined between adjacent two of the projections. Alternatively, the recess of the outer peripheral surface may be formed by cutting away a part of the outer peripheral surface extending from the front surface to the rear surface.

In the present invention, the ~~The~~ substrate may have an opening for air-cooling the semiconductor laser element.

In the present invention, the ~~The~~ substrate may be rectangular, and the projections may project outward from four corners of the substrate.

In the present invention, the ~~The~~ leads may extend from two opposite edges of the rectangular substrate and be bent perpendicularly.

In the present invention, the ~~The~~ semiconductor laser device may further comprise a mirror provided on a surface of the substrate for reflecting the laser beam emitted from the semiconductor laser element perpendicularly to the substrate surface.

In the present invention, the ~~The~~ substrate and the projections may integrally be formed of the same material.

In the present invention, the ~~The~~ substrate may have an end face configured so as to receive a lead bending spacer between the leads and the end face of the substrate when the leads are bent.

In the present invention, the ~~The~~ leads may each include an inner lead portion present inside the package and an outer lead portion present outside the package, and the outer lead portions of the leads are arranged at greater intervals than the inner lead portions of the leads.

Please amend the paragraphs beginning at page 9, line 21, through page 11, line 5, as follows:

According to another aspect of the present invention ~~technology~~, a semiconductor laser device comprises: a substrate; a plurality of substrate support blocks projecting outward from the substrate in spaced relation parallel to the substrate, the substrate support blocks cooperatively defining an outer peripheral surface which is configured so as to be fitted in a cylindrical hole; a semiconductor laser element, a light receiving element, an optical element and a plurality of leads provided on a front surface of the substrate, the optical element being adapted to guide a laser beam from the semiconductor laser element toward an object and guide a light beam reflected on the object to the light receiving element; wherein the leads have proximal ends electrically

connected to the semiconductor laser element and the light receiving element, and distal portions extending from an end face of the substrate to be bent and further extending through a gap defined between adjacent two of the substrate support blocks toward a rear surface of the substrate.

According to further another aspect of the present invention technology, a semiconductor laser device comprises: a package having a front surface and a rear surface; a plurality of interconnection leads arranged in spaced relation on the front surface of the package as extending outward from the package; a semiconductor laser element, a reflective mirror, a light receiving element and an optical element provided on the front surface of the package, the optical element being adapted to guide a laser beam emitted from the semiconductor laser element toward a medium carrying external information recorded thereon and further guide light reflected on the medium to the light receiving element; wherein the leads are electrically connected to the semiconductor laser element and the light receiving element, the leads each including an inner lead portion present inside the package and an outer lead portion present outside the package, the outer lead portions of the leads being arranged at greater intervals than the inner lead portions of the leads, and bent toward the rear surface of the package.

Please amend the paragraph beginning at page 11, line 12, as follows:

Fig. 1 is a front view of a semiconductor laser device according to a first example embodiment of the present invention, which is mounted in a light pick-up device. As shown, the semiconductor laser device 101 is fitted in a cylindrical mount hole of a housing 102 of the pick-up device. The semiconductor laser device 101 is adapted to emit a laser beam via an objective lens 104 toward an optical disk (a recording medium adapted for optical writing and reading of information) 103 and receive a light beam reflected on the optical disk via the objective lens 104.

Please amend the paragraph beginning at page 17, line 18, as follows:

Fig. 11(a) is a top view of a semiconductor laser device according to a second ~~example embodiment of the present invention~~ before leads are bent, and Fig. 11(b) is a top view of the semiconductor laser device after the leads are bent. Figs. 11(c) and 11(d) are a left side view and a front view, respectively, of the device. Fig. 11(e) is a sectional view of the device as seen in an arrow direction A-A in Fig. 11(b).

Please amend the paragraph beginning at page 20, line 16, as follows:

~~Here, the~~ The middle portions of the outer lead portions 22b having the progressively increased intervals are spaced a distance x apart from the peripheral wall of the package 105a so as to be kept out of contact with the package 105a.